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Some Fern Finds in Virginia

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Botrychium obliquum var. tenuifolium.—In August, 1924, several visits were made to Lanexa, New Kent County, Virginia (between Richmond and Williamsburg), for the purpose of verifying the existence there of *Habenaria repens*, reported by the late Professor Grimes. This orchid was not found, and there is a possibility that an abnormal plant of *H. clavellata* or *H. lacera* was mistaken for it; but the discovery of other interesting plants made the trips worth while. In the swamp along the Chickahominy River 0.7 kilometer south-southwest of the railroad station a small colony of a peculiar Grapefern[1] was noted. It differs from typical *Botrychium obliquum*, which also grows there, in its sterile segment having only 9 to 12 divisions, with more or less cuneate bases, and in the fertile segment being once-pinnate, or at most twice-pinnate at the base, and very slender-stemmed. Another distinction consists in the length of the common stalk of the two segments, which in *B. obliquum* is rarely more than 2 centimeters long, but here is 4 to 5 cm., or about one fourth the total

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[1] The spellings and arrangements of common names are those of Standardized Plant Names, Salem, 1923, except where noted.

height of the plant. It evidently approaches the southern *B. obliquum* var. *tenuifolium* (Underwood) Gilbert,[2] and justifies the inclusion of this variety in lists of ferns of the northeastern states.[3]

The habitat is a dense swampy woods, with Pond Pine (*Pinus serotina*), Baldcypress (*Taxodium distichum*), Tupelo (*Nyssa* sp.), and much Greenbrier (*Smilax* sp.)[4] The Grapeferns grow in damp peaty depressions, just low enough to be affected slightly by the tide in the river. Their soil reaction is subacid to mediacid, specific acidity 50 to 150. No consistent differences in reaction or shading could be detected between the typical species and the variety, although the latter occurs in somewhat moister places.

PELLAEA GLABELLA.—The discovery of this fern in the southwestern part of Virginia in 1923 has been announced by Rev. Fred. W. Gray.[5] In late August, 1924, it turned up in an entirely different region, namely along Hawksbill Creek, three kilometers north of Luray, Page County, or about 250 km. northeast of the other locality, a further extension of its previously known range. The colony is a very small one, not more than 10 plants being in evidence, and most of these being much stunted. It is on the north face of a small limestone cliff, standing

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[2] Nomenclature of Gray's Manual, 7th edition.

[3] There has, heretofore, been some question as to whether it should be so included, as the only northeastern material preserved was very near to *B. obliquum*; and it was omitted from the recent list of Tilton, Fern-lovers' Companion, 1922. The present material, together with a collection made by Grimes, near Williamsburg, No. 3113, at any rate seems distinct enough to receive some nomenclatorial recognition.

[4] There is less Greenbrier now than there was before my visits.

[5] This journal, 14: 124. 1924.

out on the east bank of the creek, near a cave opening around which the rock forms a sort of arch. The soil reaction is as usual for this species minimalkaline, specific alkalinity 5. The Purple Cliffbrake grows on the same rock-face, but the two can be readily distinguished even at a distance by the bluer color and more compact habit of the Smooth Cliffbrake.

CHEILANTHES TOMENTOSA.—In the article on the soil preferences of rock ferns[6] this was placed in subacid and minimacid reaction-classes on the basis of tests of soil around the roots of herbarium specimens only. It has since been tested in the field, in late May, 1923, in the railroad cut east of Natural Bridge Station, C. & O. Railroad. While the rock there is limestone (which normally gives rise to more or less alkalinity) the fern grows in gravel on such steep slopes that the rain has had a chance to leach out free lime, and the soil reaction is neutral. The same is true of *C. lanosa*, which also occurs there. Therefore, while both of these ferns seemingly prefer slightly acid soils, they can evidently tolerate neutral conditions, although their failure to grow here on the bare rock ledges indicates the unfavorable effect upon them of actual alkalinity.

POLYPODIUM VIRGINIANUM forma DELTOIDEUM.—Plants of the Rock-cap Fern[7] with deltoid fronds having basal

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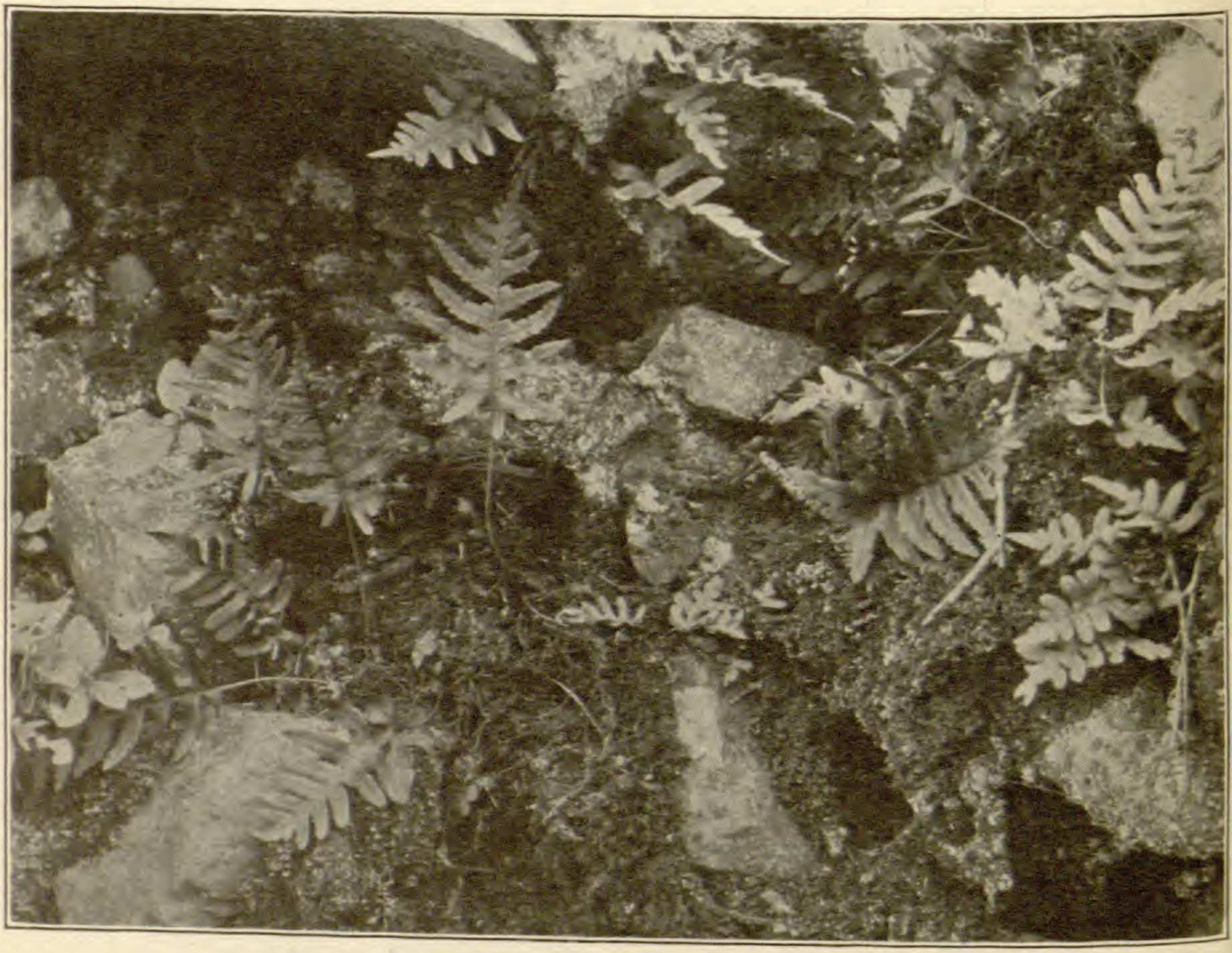
[6] This journal, 10: 17. 1920.

[7] The common name usually given for the east-American representative of *Polypodium vulgare, P. virginianum,* is "Common Polypody"; but the term "polypody" is merely a modification of the technical name, and not in common use except by people who already know this technical name. This plant is known to the more observant natives of the Appalachian Mountains as the Rock-cap Fern, which is so appropriate a term that its introduction into general use seems desirable.



Polypodium virginianum, forma deltoideum,
Bath County, Virginia

spurs were observed in mid-August, 1924, on sandstone ledges around a small spring in open woods on the east side of the road to Bolar, 11 kilometers north-northwest of Warm Springs, Bath County. There were all gradations from the peculiarly shaped fronds to normal ones, and both extremes were often definitely attached to the same rootstocks (plate 1). The soil reaction proved to be subacid, specific acidity 50, a value characteriste of many occurrences of the species.

POLYPODIUM VIRGINIANUM forma ACUMINATUM.—A colony of the Rock-cap Fern with unusually large fronds having markedly acuminate segments was found on a sandstone boulder in a Hemlock-Rhododendron woods on the east side of the road, 3 km. north-northeast of the preceding locality. All of the hundred or more fronds on the clump were alike (plate 2), although adjacent boulders were covered by plants with normal fronds. The soil reaction is low subacid, specific acidity 10–20.

While both of the above variants of *Polypodium virginianum* may be forms, in the technical sense in which that term is used by modern taxonomists, the writer here ventures to suggest that their relationship to the typical species is sufficiently different to justify some sort of nomenclatorial recognition. The "deltoideum" outline is an individual-frond variation, which, in the writer's experience at least, occurs more or less throughout the range of the species. On the other hand, the "acuminatum" type is an individual-plant variation, and has apparently been observed only in northern and high altitude localities. Just how this recognition shall be made may be left for specialists in taxonomy to decide.

THELYPTERIS SIMULATA.—The southernmost locality at which this fern has been reported heretofore appears to

Polypodium virginianum, forma acuminatum,
Bath County, Virginia

be Suitland, Maryland, just east of the District of Columbia. In the course of the trip to Lanexa, Virginia, described above under *Botrychium*, a small colony of it was found in the dense swamp about 0.6 kilometer south-southwest of the station. The soil, which is damp and peaty, proved to be low mediacid in reaction, specific acidity 100, as usual for the species. This extends its known range southward some 175 kilometers.

ASPLENIUM EBENOIDES.—Two plants of this hybrid were noted in late August, 1924, one on the southeast bank of the Shenandoah River one kilometer southwest of Overall Station, the other 2 km. further southwest, along Dry Run near Compton Station, both in Page County, in the Shenandoah Valley. The former plant was photographed but not disturbed; the latter, being in a precarious situation, at the edge of a chicken yard surrounded by luxuriant weeds, was transplanted to the writer's garden. The rock in both cases was limestone, and the soil reaction minimalkaline, specific alkalinity 5 to 8.

ASPLENIUM BRADLEYI.—Because of the rarity of this species, as well as the conflicting statements in the literature as to its soil preferences, new localities for it are always worth reporting. In May, 1924, during an excursion of Wild Flower Preservation Society members from Washington, D. C., to Point of Rocks, on the Potomac River, a single plant of unmistakable *A. bradleyi* was found on quartzite ledges, on the north face of cliffs along Furnace Mountain, Loudoun County, Virginia. Its soil reaction proved to be low mediacid, specific acidity 100, as usual for the species in the writer's experience.

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